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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/529,723

03/30/2005

Evert Jan Ditzel

608-449

9138

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7590

02/15/2008

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EXAMINER

ZUCKER, PAUL A

ART UNIT

PAPER NUMBER

1621

MAIL DATE

DELIVERY MODE

02/15/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/529,723	DITZEL ET AL.	
	Examiner	Art Unit	
	Paul A. Zucker	1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) 15-30 and 40-47 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 31-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-47 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/30/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I, claims 1-14 and 31-40 in the reply filed on January 8, 2008 is acknowledged. The traversal is on the ground(s) that the single general inventive concept is that the claims are directed to the mitigation of problems caused by the exposure of alkenyl carboxylate catalysts to alkenes. This is not found persuasive because while it is true that each group is directed to the mitigation of problems caused by the exposure of alkenyl carboxylate catalysts to alkenes, the problems are different for each group and therefore represent distinct processes sharing no general inventive concept. The requirement is still deemed proper and is therefore made FINAL. Claims 15-30 and 41-47 are held withdrawn from consideration as being drawn to a non-elected invention.

Specification

2. The disclosure is objected to because of the following informalities: A section entitled Brief Description of the Several Views of the Drawings is required See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 1621

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-14 and 31-40 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Kitchen et al (US 6,258,978-B1 07-2001). NOTE: For the purposes of this rejection the Examiner considers the limitation "the outlet stream comprises less than 2 vol% oxygen" to require that the percentage oxygen in the outlet stream be maintained at greater than 2% by reducing the alkene partial pressure.

Instantly claimed is a process for producing an alkenyl carboxylate wherein in said process during a process upset, start-up or shut-down, when the catalyst is contacted with the alkene, at a partial pressure, P, optionally in the presence of the carboxylic acid, and the outlet stream comprises less than 2 vol% oxygen, the partial pressure of the alkene is reduced and/or the reaction temperature is reduced so as to suppress formation of benzene and/or suppress inhibition of the catalyst.

Kitchen teaches(Abstract) a process for the production of vinyl acetate by reacting ethylene, acetic acid and an oxygen-containing gas in a reactor to produce a process stream which is removed from the reactor as an outlet stream, the process

is improved by maintaining the oxygen concentration of the outlet stream at or near its flammability limit. Adjustment of alkene concentration on the basis of such monitoring necessarily lags oxygen level changes. Kitchen teaches (Column 5, lines 61-67) that the process is carried out in a reactor at a temperature of 100 °C to 400°C and a pressure of between 0.5 barg and 20 barg. Kitchen teaches (Column 6, lines 13-20) the use of air or molecular oxygen as the oxygen source. Kitchen teaches (Column 4, line 47-column 5, line 40) Group VIII, supported catalysts. Kitchen teaches (Column 1, lines 63-67) that control of oxygen levels gives an increase in the productivity and selectivity of his process. Kitchen teaches (Column 2, line 49- column 3) shutting down the reactor on the basis of a change in oxygen concentration. During the shutdown taught by Kitchen, and in order to maintain oxygen levels as Kitchen teaches, one of ordinary skill in the art would have had to modify the alkene concentrations in order to maintain the proper ratio with oxygen. Eventually reactant levels reach 0% and, presumably, temperatures reach ambient after completion of shut down. Though Kitchens is silent with regard to flowing nitrogen through the system during and after shut down, such is obvious since both the alkene starting material and product alkenyl carboxylate are polymerizable and failure to clear the reaction system of these materials would lead to polymer fouling of the reactor, etc. Kitchens is silent with regard to the presence of benzene, the Examiner therefore presumes none is present.

The difference between the process taught by Kitchens and that instantly claimed is that Kitchens prefers to maintain oxygen levels below 10% while 2% levels are instantly required.

Kitchens, however, teaches (Column 3, lines 15-19) threshold oxygen values at or below 10% which encompass the instantly claimed oxygen values. Kitchens further teaches (*ibid*) that the appropriate levels depend on a variety of factors, the determination of which, presumably, requires experimentation and that controlling the oxygen levels (*vide supra*) leads to increases in selectivity. One of ordinary skill would therefore have been motivated to adjust levels of oxygen at all points in the process (start up, operation, shut down) in order to optimize the selectivity. Kitchens' teaching would have provided a reasonable expectation of success.

Thus the instantly claimed process would have been obvious to one of ordinary skill in the art.

Conclusion

4. Claims 1-47 are pending. Claims 1-14 and 31-40 are rejected. Claims 15-30 and 41-47 are held withdrawn from consideration.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul A. Zucker whose telephone number is 571-272-0650. The examiner can normally be reached on Monday-Friday 5:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Evonne Eyler can be reached on 571-272-0871. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Paul A. Zucker/
Primary Examiner, Art Unit 1621